



Understanding Regulations on Solvent Cleaning Equipment

WHAT YOU NEED TO KNOW TO COMPLY

Ecology Fact Sheet

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The 1990 Clean Air Act (CAA) directs the U.S. Environmental Protection Agency (EPA) to regulate emissions into the air of 189 toxic chemicals. To control emissions of these chemicals, the EPA issues National Emission Standards for Hazardous Air Pollutants (NESHAPs).

On Dec. 2, 1994, the EPA issued national regulations to control toxic air pollutant emissions from solvent cleaning equipment (including dip tanks and parts washers) that use any of the following halogenated solvents: **methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride and chloroform.** Solvent cleaning equipment is used to remove residues, such as grease, wax and oil, from metal parts, assemblies and other fabricated products. The rule is a pollution prevention regulation that reduces solvent usage by requiring the use of good housekeeping practices and efficient, well-controlled cleaning equipment.

The six solvents listed above are known or suspected carcinogens, and have high usage and emissions in solvent cleaning. Consequently, the EPA has determined that emissions from cleaning equipment using these solvents present a threat to human health or the environment.

All owners and operators of any size solvent cleaning equipment at any size facility that uses any of the six named solvents are affected by this regulation. (Ask your vendor or refer to your Material Safety Data Sheets [MSDSs] to determine whether you use these chemicals in your cleaning process.) How you are affected depends on the compliance option you choose (*see the figure below for rules governing batch cold cleaning equipment; vapor degreasers have requirements not covered here*).

If you own or operate any size solvent dip tank or parts washer you are required to comply with the National Emission Standards for Hazardous Air Pollutants for halogenated organic solvents by Dec. 2, 1997, as mandated by the 1990 Clean Air Act. This means you must stop using the chemicals that are regulated under the rule, or install required controls on equipment and adopt specific work practices.

COMPLIANCE OPTIONS

DIP TANK

(Immersion Batch Cold Cleaning Equipment)

PARTS WASHER

(Remote Reservoir Batch Cold Cleaning Equipment)

Required Controls

Option 1

1. Install a cover.
2. Achieve 1-inch water layer.
3. No work practices required.

Option 2

1. Install a cover.
2. Maintain a freeboard ratio of 0.75 or greater.
3. Work practices required.

Required Controls

1. Install a cover.
2. Work practices required.

Work Practices

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| <ol style="list-style-type: none"> 1. Store solvent waste in closed containers. 2. Flush parts in freeboard area. 3. Reduce pooling of solvent on and in parts. 4. Do not fill cleaning equipment above fill line. | <ol style="list-style-type: none"> 5. Clean solvent spills immediately. 6. Store wipe rags in closed containers. 7. Do not agitate solvent to the point of causing splashing. 8. When cover is open, control room drafts. 9. Do not clean absorbent materials. |
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ACHIEVING COMPLIANCE THROUGH POLLUTION PREVENTION

AN ALTERNATIVE: POLLUTION PREVENTION

There may be steps you can take so you never have to worry about your compliance status — for example, **stop** using the toxic materials that are regulated. Eliminating or minimizing the use of toxic substances is called “pollution prevention.” The following pollution prevention opportunities can help your company:

- meet federal regulations and cut your paperwork burden;
- reduce costs by using fewer raw materials;
- cut waste transportation and disposal costs; and
- reduce long-term liability and insurance costs.

Before looking at pollution prevention opportunities, it is important to understand your situation. Consider the following questions:

- What is being cleaned?
- What are the contaminants?
- How “dirty” are the parts prior to cleaning?
- How are the parts getting dirty in the first place?
- What are the minimum requirements for cleanliness that must be met for this process?
- Is a specific type of cleaning required by internal or external specifications?
- Is continuous or batch processing required?

POLLUTION PREVENTION OPPORTUNITIES

One of the most widely accepted pollution prevention opportunities is to adopt alternative cleaning methods or materials. Such changes include eliminating the cleaning process; using water-based or semi-water-based cleaning systems and/or materials; or using a specialty cleaning process, such as supercritical carbon dioxide or vacuum de-oiling.

The following steps will help you analyze your cleaning process and possible alternatives.

Step 1: Evaluate Eliminating Cleaning

Consider whether cleaning your parts is necessary.

a. Check your minimum cleanliness requirements, and think carefully about those requirements. You may be “overcleaning.” If you cannot eliminate cleaning, you may be able to reduce the amount of cleaning you do (*see Step 3, options 1 and 2*).

b. Investigate controlling the contamination of parts. You may find that you can meet minimum cleanliness requirements without cleaning. If not, you may be able to reduce the load on the cleaning system (*see Step 3, options 1, 2 and 3*).

c. Investigate process changes that make cleaning unnecessary. If you are cleaning because of residue put on a part by a current process, see if there is an alternative process that meets your needs without leaving any residue (or that leaves residue that can be left on).

d. Work to change internal specifications that require cleaning, if you can prove it is not technically necessary. If external specifications require cleaning with a regulated substance, inquire with the customer if a change would be acceptable. If not, refer to the required equipment controls and work practices listed in the figure (front) and Step 3 (right).

Step 2: If Cleaning is Still Required, Investigate Alternative Cleaning Processes

Consider cleaning parts with an alternative process.

a. Determine which alternatives are compatible with your parts and will remove contaminants, based on information from vendors, peers or others. Try to identify water-based alternatives.

b. Identify which of the compatible alternatives is most economical and convenient.

c. Have enough representative parts “test cleaned” to verify that the alternative will work for you, and to identify any modifications you will need to make to use the new process.

d. Work to change internal specifications that require a specific cleaning process if you can prove a viable alternative exists. If external specifications require cleaning with a regulated substance, inquire with the customer if a change is acceptable.

Step 3: If Alternatives are not Feasible, Optimize the Current Cleaning Process

1. Consolidate multiple cleaning steps into one step.
2. Investigate ways to reduce contamination of parts prior to cleaning.
3. Extend solvent “change-out” schedule with vendor.
4. Locate cleaning tanks away from heat sources.
5. Have only trained employees use the equipment.
6. Find a less-toxic solvent.

WHO TO CALL FOR HELP

Through the Washington Department of Ecology’s Air Quality Business Assistance Program, non-regulatory assistance is available for small businesses with air quality questions. The purpose of the program is to:

- explain the air quality rules and recommend ways to comply;
- provide free, on-site technical assistance visits;
- help businesses estimate their air pollution emissions;
- refer businesses to needed resources; and
- provide information on potential sources of financing for compliance requirements.

For more information, contact:

Small Business Assistance Program

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Small Business Ombudsman

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<http://www.wa.gov/ecology>

